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BSL PRO v3.6 FEATURES

This Application Note summarizes the software changes implemented in BSL *PRO* v3.6. For BSL Lesson upgrade features, see [Application Note #163](#).

FEATURE	DESCRIPTION
Software	<p>BSL <i>PRO</i> v3.6 is a 32-bit application.</p> <p>BSL <i>PRO</i> v3.6 will not run under Windows 3.1.</p> <p>The program uses new installation drivers.</p>
Accelerator Keys	<p>Ctrl-T Plot (used to be Ctrl-P)</p> <p>Ctrl-M Journal-Paste measurement</p> <p>Ctrl-Minus Zoom Back</p> <p>Ctrl-Plus Zoom Forward</p> <p>Ctrl-G "Zoom" cursor</p> <p>Ctrl-I "I-Beam" cursor</p> <p>Ctrl-B "Arrow" cursor</p>
Journal	<p>"Summary to Journal" option added to the find marker pull down menu. If the journal is open, it will copy the information regarding the markers to the journal. This includes the Marker Number, the Marker Text and the Time the marker occurred.</p>

Measurement window	<p>When showing the Selected Channel</p> <ul style="list-style-type: none"> - channel label is displayed near the Channels buttons - label area of the selected waveform is highlighted - Measurement value for the units is displayed. It shows the same information that is pasted into the journal
Customization feature	<p>You can easily customize menu displays to show only the functions you are using, thereby reducing the risk of error or confusion in the lab. This is particularly powerful for creating your own lessons. See the Menu.dsc section for details.</p>
About menu	<p>Added menu ? Generates the About BSL <i>PRO</i> screen. This screen now contains more system information that might be useful for Tech Support.</p> <p>The "Licensed To:" string was added to show the user who signed up for the operating system (When installing Windows software)</p> <p>Line frequency information in this window. This was the 50/60 Hz choice the user made upon installation.</p>
File menu	Description
Keyboard shortcuts added	<p>Ctrl-N New Ctrl-P Print (now use Ctrl-T to Plot)</p> <p>Ctrl-O Open Ctrl-Q Quit</p> <p>Ctrl-S Save</p>
Open : file types	<p>File type options include Student Lab Lesson generated files, <i>PRO</i> data files, <i>PRO</i> journal files, or Graph template files. When Student Lab Lesson generated files are opened, they open like the Review Saved Data mode opens them with the journal and data window properly positioned.</p> <p>All of the possible data files created by previous versions of BSL and AcqKnowledge work.</p>

<p>Open : Graph Template option</p>	<p>This new Graph template option will be used when the user wants to setup an experiment in which the students can simply open the template file and click the start button.</p> <p>Note that when a template is opened, it contains no data. If the user clicks the start button, and collects data, the Save option will be grayed out. In order to save the data, they must use the Save As option.</p>
<p>Open : open multiple files</p>	<p>Select designated files by using Ctrl-click or a range of files by selecting with Shift-click. The Open command will open all of the files selected and will tile the display.</p>
<p>Save/Save As</p>	<p>Allow a Save for <u>any</u> change made to data or journal window. All setup parameters, window size and position will be saved with the Data file. When the data file is re-opened, the other misc. windows (Input Value, Stimulator, Trigger, Manual Control, Journal, etc.) open during the save are not re-opened, however the position of the window will be restored when the user chooses the specific window from the MP30 menu.</p>
<p>Save As : Graph template</p>	<p>This powerful feature allows instructors to predefine experiments. Students then open the template file and simply click "Start" to run the experiment.</p> <ol style="list-style-type: none"> 1. Saving as a template should save only the setup parameters, and window positions. The user must still use the Save or Save As option to save the graph. 2. When a template is opened, it contains no data. If the user clicks the start button, and collects data, the Save option will be grayed out. In order to save the data, they must use the Save As option. <p>All setup parameters, window size and position will be saved with the Template file. If any window (input values, stimulator, manual control, etc.) is open when the template is saved, when re-opened, it will come up exactly as it was.</p>

<p>Preferences > General</p>	<p>Now includes Update Screen interval options of quarter, half or full page.</p> <p>USI is a right mouse shortcut option when you click in the horizontal scale.</p> <p>Option to not allow the use of any waveform tools (Arrow, I-Beam or Zoom) during the acquisition.</p>
<p>Preferences > Journal</p>	<p>Specify the number of spaces between tabs and use selected TAB size in INCH to print journal.</p> <p>Specify font to be used in the journal and use selected font to print journal.</p> <p>Option for making the journal text wrap.</p>
<p>Transform menu</p>	<p>Description</p>
<p>Digital filters</p>	<p>Now includes IIR filter options: Low Pass, High Pass, Band Pass (low + high), Band Pass and Band Stop</p>
<p>Template functions</p>	<p>Now includes Inverse Mean square error option.</p>
<p>Integrate</p>	<p>New option for transformation functions (also a calculation channel option).</p> <p>The Integrate setup box is divided into two sections, each with appropriate options: Average over samples and Reset via channel</p> <p>Control channel option added to perform transformation using a different control channel.</p>
<p>Difference</p>	<p>Calculation is now based on intervals between samples rather than sample points.</p>
<p>Resample</p>	<p>Minimum rate 0.0333 added to dialog.</p>

Math >Threshold	The Threshold has been changed from (-1:+1) to (0:+1)
Smoothing	Includes options for <u>Mean value smoothing</u> and <u>Use median value</u> *See also MP30 menu > Setup Channels > Calculation Preset> Smoothing
Find peak	Now includes options for <u>User-defined interval</u> (for data reduction) and <u>Off-line averaging</u> Control channel option added to perform transformation using a different control channel.
Display menu	Description
Zoom	Now offers two zoom options; "Zoom Forward" and Zoom Back". " These buttons will work with the last 5 zoom commands.
Reset chart display	New to menu; option is also (somewhat hidden) in the "Size window" dialog.
Show > Scope Mode	When in scope mode, and using the "AutoScale Waveforms" option, each waveform will autoscale as if they are the only waveform in the display region. This will greatly aid in overlapping waveforms that are of different units and scales.
Show > Toolbar	Add the option to Show/Hide the Toolbar.

<p>Show > Measurements</p>	<p><u>New options added for: Revised formula for:</u></p> <p>Lin-reg (linear regression/old "slope") Slope</p> <p>Max T (Time of Maximum)</p> <p>Min T (Time of Minimum)</p> <p>Median</p> <p>Median T (Time of Median)</p> <p>Correlation</p> <p>Calculate (Create your own calculations using existing measurements)</p>
<p>Show > Grid Options</p>	<p>You can apply several different grid styles to your data to help with analysis. UNLOCKED grids help you view the data display on the monitor whereas LOCKED grids help more with printing. You can set the Grid Options to create printouts that look similar to chart recorder output. You can add minor grid divisions and control grid line color and thickness.</p>
<p>MP30 menu</p>	<p>Description</p>
<p>Setup Channels</p>	<p>-The user will be able to select input presets and calculation presets from the first window. They will also be able to make new presets, and have them saved.</p> <p>-New user interface for easier setup.</p> <p>-For the specific Channel Setup options, the offset will be in the Scaled Units.</p> <ul style="list-style-type: none"> • An "Update Hardware Now" button will be added to the second Channel Setup window which will allow any changes made to input hardware circuits to be performed when the button is pressed. This will avoid confusion, and aid in certain channel setup.

	-The number of calculation channels has increased from 4 to 12.
Presets	There are factory-established "Presets" that allow the user to easily configure hardware parameters. These presets can be modified, and/or new presets can be created and saved for later use.
Scaling	<p>The Change Scaling Parameters box now includes an "Option" section with:</p> <p>Calibrate ALL channels at the same time</p> <p>Use mean value</p> <p>When "Use mean value" is selected, a "Settings" button is available, which leads to an entry for the number of samples.</p>
Integrate Calc. channel Preset	The Integrate calculation box is now divided into two sections, <u>Average over samples</u> (EMG) and <u>Reset via channel</u> for airflow, each with appropriate options
Smoothing Calc. channel Preset	<p>Now includes "Use median value" option</p> <p>*See also Transform menu > Smoothing</p>
Difference Calc. channel Preset	<p>Calculation is now based on Intervals between samples rather than sample points.</p> <p>*See also Transform menu > Difference</p>
Control	The output signal range has changed from (0:+5) to (0:+1)
Setup Acquisition	Show the amount of memory that will be used per second. This will take into account all of the active channels, and whether the channel is a calculation (floating point) channel or an analog input channel (16 bit number).

Sample Rate : High Speed Mode	The BSL <i>PRO</i> software can acquire data from 1 to 100,000 samples/sec. This allows recording of almost all physiological parameters from slow moving temperature data to fast response action potential data. This means you can use the BSL <i>PRO</i> software to replace both your chart recorder and oscilloscope.
Show Input Values > Font	You can set the font type, style, and/or size for the Show Input Values display. Click on the FONT button, then adjust the settings and click OK.
Show Stimulator > Delay	Delay function added to stimulator setup. Allows one to select a delay value before the pulse occurs. This will only work in the "Start/Stop Stimulator with Start and Stop of Acquisition" mode.
Configuration	Removed from menu; no longer a software option.

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